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FIG. 1
PRIOR ART

```
1  c:\collections
2    notes.txt
3    myletter.doc
4    c-myhomepage
5
6    s
7    homepage.html
8    myphoto.jpg
```

FIG. 2

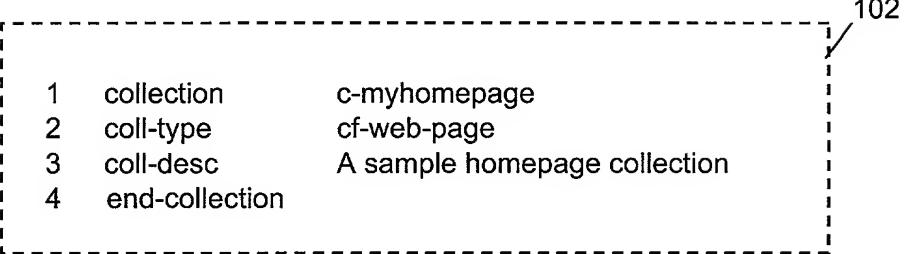
```
1  c:\collections
2    notes.txt
3    myletter.doc
4    c-myhomepage
5    cspec
6    s
7    homepage.html
8    myphoto.jpg
```



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FIG. 3

```
1  collection      c-myhomepage
2  coll-type       cf-web-page
3  coll-desc       A sample homepage collection
4  end-collection
```



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FIG. 4

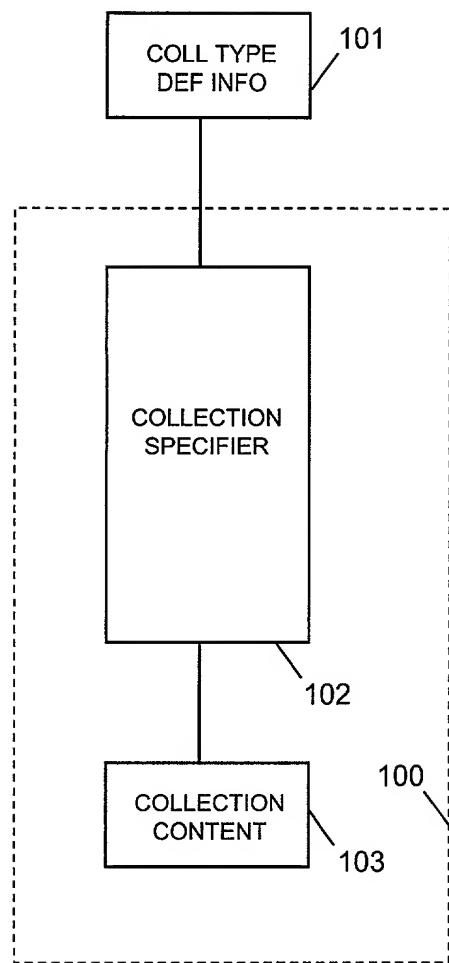


FIG. 5

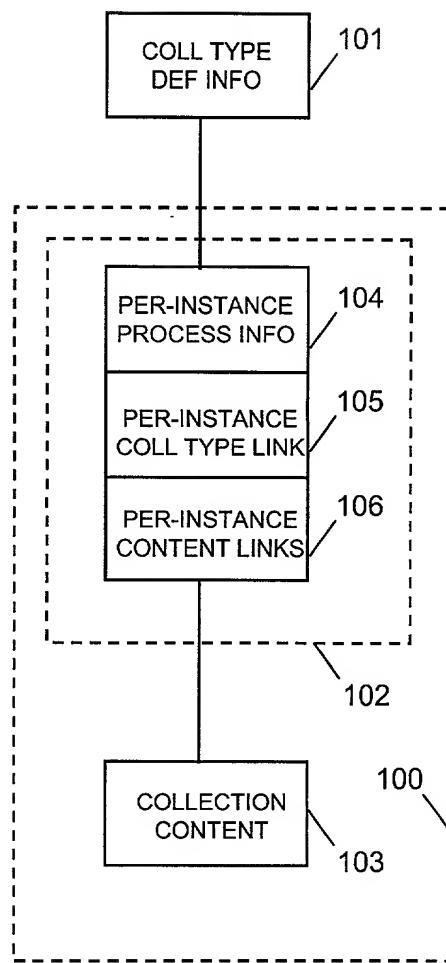


FIG. 6

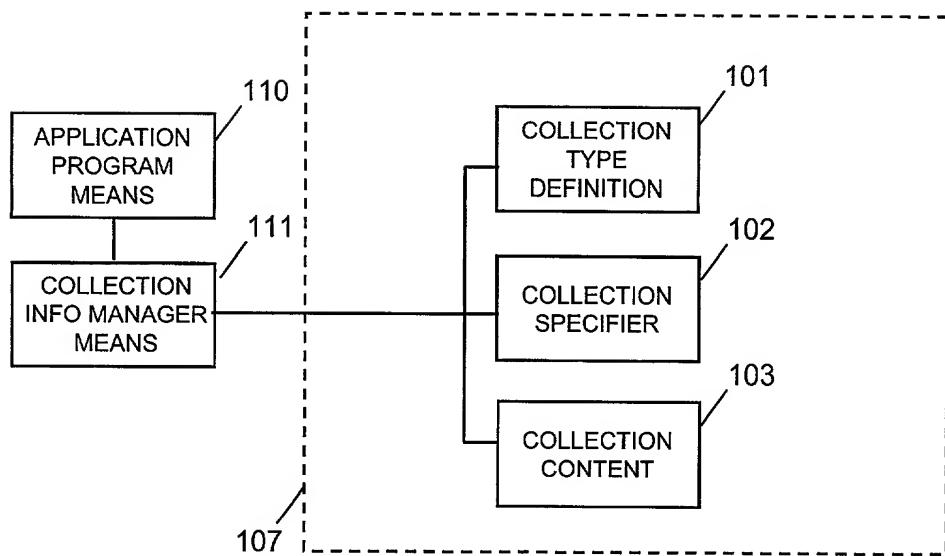


FIG. 7

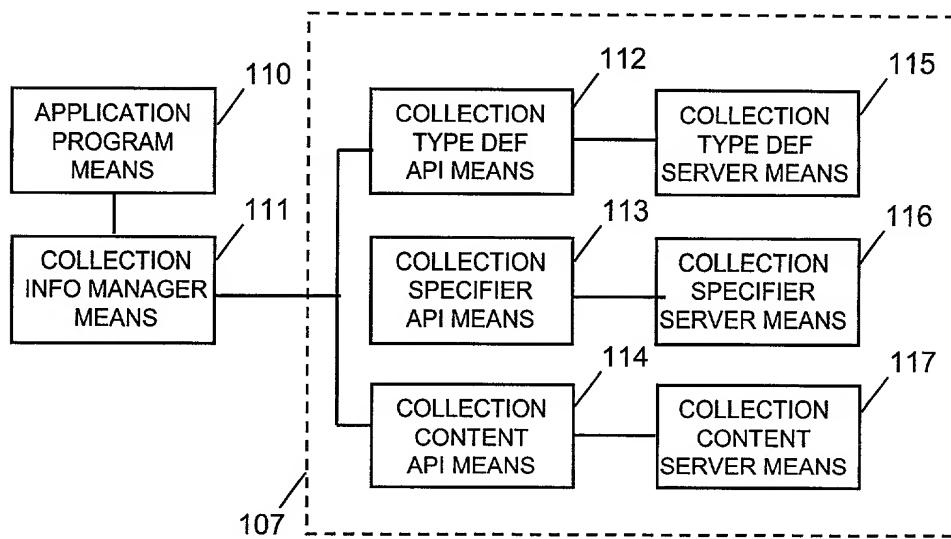


FIG. 8

```
1 /* collection data structure */
2 collection-info {

3     + specifier_info
4         + coll-type-indicator
5         + other specifier information ...
6
7     + content_info
8         + content_location_info ...
9         + content_members ...
10        + other content information...
11 }
```

FIG. 9

```
1 /* collection type definition data structure */
2 collection-type-definition-info {

3     + coll-type-name
4     + collection internal structure info ...
5     + collection content location info ...
6     + collection content type recognition info ...
7
8     + other collection type definition information...
9 }
```

FIG. 10

<u>KEY</u>	<u>VALUE</u>
1 /* collection type internal structure definitions */	
2 dir_source_files	./s
3 dir_doc_files	./doc
4 /* content location definitions (per-type content links) */	
5 content_subtree_http	http://host.com/some/dir/name
6 content_subtree_ftp	ftp://host.com/some/dir/name
7 content_subtree_nfs	/some/local/directory/name
8 /* content type recognition definitions */	
9 content_policy	subtree_below_cspec_file
10 content_file_type	.c file_cpp
11 content_file_type	.c file_c
12 content_file_type	.h file_c_include
13 content_file_type	.doc file_ms_word
14 content_file_type	.html file_html
15 content_file_type	.xls file_ms_excel
16 /* collection processing definitions */	
17 compile_c_files	yes
18 compiler_windows	vc++
19 compiler_unix	gcc
20 build platforms	Win98, Win2000, gnulinux
21 process files	compile link
22 link libraries	stdio math sock
23 /* results dispatching definitions */	
24 results_ftp_host	ftp.output.com
25 results_ftp_dir	c:\ftphome\collection\results

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FIG. 11

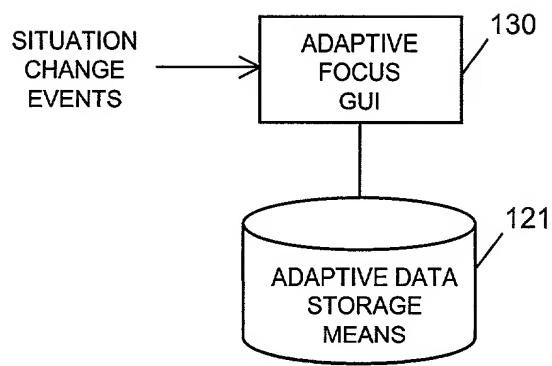


FIGURE 11: ADAPTIVE FOCUS GUI

FIG. 12

- 1 /* simplified algorithm for an adaptive focus GUI */
- 2 Receive an incoming situation change event
- 3 Adapt to the new situation, using stores of adaptive knowledge

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FIG. 13

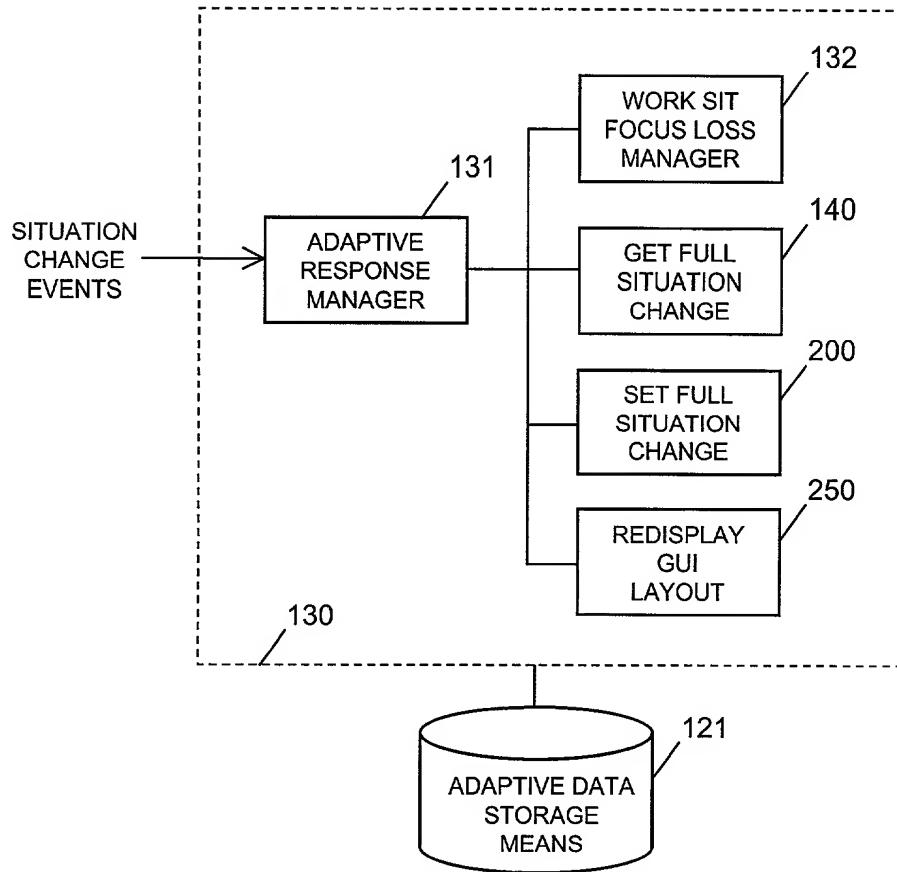


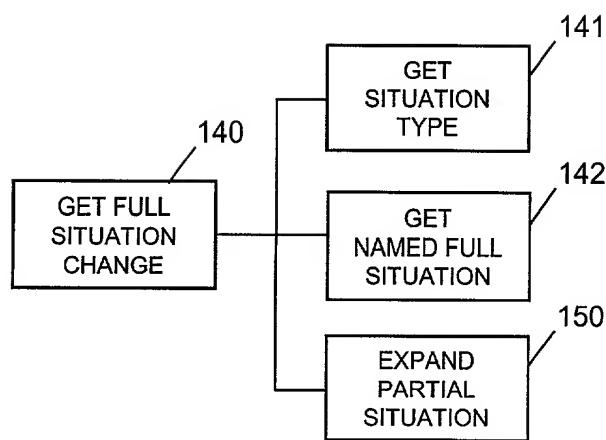
FIG. 14

- 1 /* simplified algorithm for Adaptive Response Manager */
- 2 Receive situation change event
- 3 Perform loss of focus actions for current work situation
- 4 - focus loss manager performs cleanup operations
- 5 - focus loss manager performs logging and other operations
- 6 Derive a full situation change description from the change event
- 7 Install the new full situation change, thereby adapting the GUI
- 8 to the incoming situation change event; do focus gain actions
- 9 Redisplay the newly adapted GUI layout

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FIG. 15



File: 03-02-19 - 03-02-19

FIG. 16

- 1 /* simplified algorithm for Get Full Situation Change */
- 2 Obtain change event type from incoming change ev
- 3 If sit change event type = full situation change
- 4 Get full situation definition from situation name table
- 5 Else if sit change event type = partial situation change
- 6 Expand partial situation into full situation according to
- 7 current partial situation expansion policy.
- 8 Return a full work situation description to caller.

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FIG. 17

```
1 name-full-sit.tbl:  
2 # a table of situation names  
3 # sit-name      definition file  
4 doc-new-html    doc-new-html.def  
5 sit-my-program  sit-my-program.def  
6 sit-manager     sit-manager.def  
  
7 full-situation-definition.def:  
8 # a definition file for a particular situation  
9 sit-desc      <a descriptive text string>  
10 sit-type      <a situation type name from name-sit.tbl>  
11 sit-ctx       <a context name from name-context.tbl>  
12 sit-basedir   <a base directory in the filesystem>  
13 sit-coll      <a collection name from the base directory>  
14 sit-role      <a role name from name-role.tbl>  
15 sit-timeset   <a timeset name from name-timeset.tbl>  
16 sit-fvar      <a pair: fvar-name fvar-value>  
17 sit-fgroup    <a focus group name from name-fgroup.tbl>
```

TRANSFORMATIVE COMPUTATION



FIG. 18

```
1 Example Situation Values  
2 # typical values allowed in situation definition files  
  
3 current      leave current value in place  
4 none         replace current value with nothing  
5 default      replace current value with the default value  
6 <new>        replace current value with a new value  
7 derived       replace current value with a value derived from  
8             some other previously determined situation value
```



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FIG. 19

```
1 sit-my-program.def:  
2 # sit definition for a programmer working on a favorite  
3 # program and its 4 libraries in a favorite working directory  
4 #  
5 sit-desc  Work on my-program and its four libraries.  
6 sit-type  st-default  
7 sit-ctx   mine  
8 sit-basedir /home/user/sits/my-program  
9 sit-coll   c-my-program  
10 sit-role   developer-java  
11 sit-timeset st-default  
12 sit-fvar   fgui-focus-coll-button-one    c-my-program  
13 sit-fvar   fgui-focus-coll-button-two    c-lib-one  
14 sit-fvar   fgui-focus-coll-button-three  c-lib-two  
15 sit-fvar   fgui-focus-coll-button-four  c-lib-three  
16 sit-fvar   fgui-focus-coll-button-five  c-lib-four  
17 sit-fgroup fg-dev-java
```

FIG. 20

```
1 doc-new-html.def:  
2 # sit def for working on a new html document  
3 #  
4 sit-desc  Work on a doc in the html base directory  
5 sit-type  st-doc-html  
6 sit-ctx   mine  
7 sit-basedir /home/user/sits/html  
8 sit-coll   none  
9 sit-role   documenter  
10 sit-timeset default  
11 sit-fgroup fg-doc-html
```





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FIG. 21

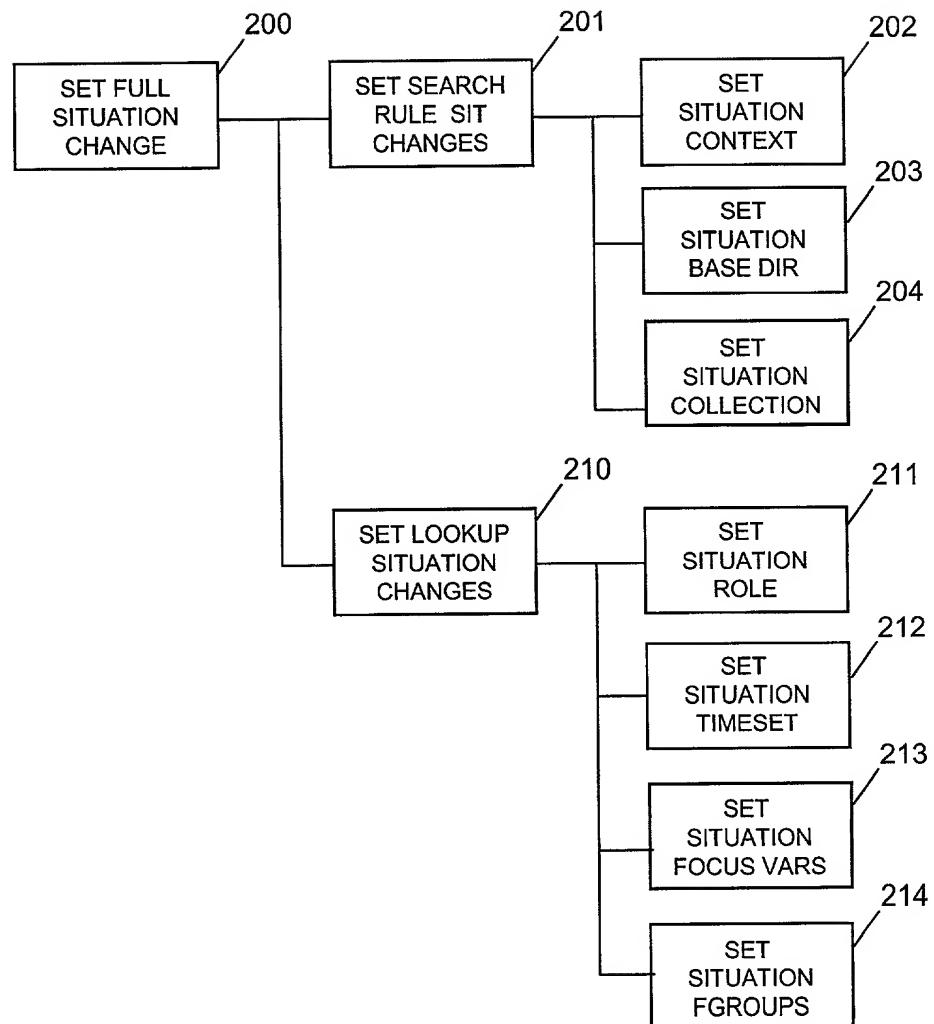
```
1 name-type-sit.tbl:  
2 # table of situation type names  
3 st-default      st-default.def  
4 st-debug        st-debug.def  
5 st-default.def:  
6 sit-ctx         ctx-project-1  
7 sit-basedir    c:\project-1  
8 sit-coll        none  
9 sit-role        role-proj1-developer  
10 sit-timeset    ts-company  
11 sit-fvar        proj-name project-1  
12 sit-fgroup     fg-proj-1  
13 st-debug.def:  
14 sit-ctx         ctx-debug  
15 sit-role        role-developer-debug  
16 sit-fgroup     fg-debug
```



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FIG. 22



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FIG. 23

```
1 /* simplified algorithm for Set Full Situation Changes */  
2 Set situation changes that help to define knowledge search rules  
3 Set situation changes that use knowledge search rules
```

FIG. 24

```
1 /* simplified algorithm for Set Search Rule Situation Changes */
2 Set situation context
3 Set situation base directory
4 Set situation collection directory
```

FIG. 25

```
1 /* simplified algorithm for Set Lookup Situation Changes */
2 Look up and set situation role values
3 Look up and set situation timeset values
4 Look up and set situation focus variables
5 Look up and set situation focus variable groups
```

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FIG. 26

```
1 name-context.tbl:  
2 # table of named contexts  
3 # name      definition-file  
4 default     default.def  
5 debug       debug.def
```

FIG. 27

```
1 name-base-dir.tbl:  
2 # table of named base directories  
3 project-1   c:\projects\project-1  
4 debug        c:\mystuff\debug-dir
```

FIG. 28

```
1 name-role.tbl:  
2 # table of named roles  
3 # name      definition-file  
4 manager     role-manager.def  
5 developer   role-developer.def  
  
6 role-manager.def:  
7 role-layout  layout-manager  
8 role-fgroup  fg-default  
9 role-fvar    role-name default  
  
10 role-developer.def:  
11 role-layout  layout-developer  
12 role-fgroup  fg-office-servers  
13 role-fgroup  fg-office-repositories  
14 role-fvar    role-name developer
```

FIG. 29

```
1 name-timeset.tbl:  
2 # name      definition-file  
3 day-shift  day-shift.def  
4 night-shift night-shift.def  
5 lunch-menu  lunch-menu.def  
  
6 day-shift.def:  
7 # time sensitive situation changes during the day shift  
8 #  
9 # hour 1 of 9am-5pm is spent in management role  
10 time 0900  
11 sit-ctx      default  
12 sit-role     role-manager  
13 end-time  
14 #  
15 # next 2 hours are spent doing development on project 1  
16 time 1000  
17 sit-ctx      default  
18 sit-basedir  project-1  
19 sit-role     developer  
20 end-time  
21 #  
22 # rest of the shift is spent in sysadmin role  
23 time 1200  
24 sit-basedir  debug  
25 sit-role     sysadmin  
26 end-time
```



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FIG. 30

```
1  # some example focus variables and their values
2  #
3  cfg-cust-ctx      default
4  cfg-cust-dir-cust c:\codefast\version\site
5  cfg-cust-dir-inst c:\codefast
6  cfg-cust-cfg-file default/focusgui/pi/d-i/idx-svc-kj-web.tbl
7  cfg-cust-inst-type cf-both
8  cfg-cust-platform win2000.plt
9  cfg-cust-tree      NEW
10 cfg-cust-context  default
11 cfg-cust-base-dir _HOME_\\code
12 cfg-cust-collection testme
13 cfg-cust-role      developer
14 cfg-cust-timeset   default
15 cfg-cust-prev-coll c-myprogram
```





FIG. 31

```
1  name-fgroup.tbl:  
2  # name      definition-file  
3  #  
4  # focus groups for roles  
5  fg-role-default      fg-role-default.def  
6  fg-role-developer    fg-role-developer.def  
7  #  
8  # focus groups for working from various locations  
9  fg-office            fg-office.def  
10 fg-home              fg-home.def  
11 #  
12 # focus groups for projects  
13 fg-project-1         fg-project-1.def  
14 fg-project-2         fg-project-2.def  
  
15 fg-office.def:  
16 # set fvars to point at office servers  
17 server-repository    rep.office.company.com  
18 server-news          news.office.company.com  
19 server-cks           cks.office.company.com  
  
20 fg-project-1.def:  
21 # set focus variables for project 1 things  
22 project-1-dir        c:\some\directory  
23 project-1-logfile    project-1.log  
24 project-1-notes      project-1-notes.txt  
25 project-1-maillist   project-1-staff.txt
```



FIG. 32

```

1  name-layout.tbl:
2  # sym-name           definition-file
3  layout-developer     layout-developer.def
4  layout-manager       layout-manager.def

5  layout-developer.def:
6  # GUI layout definitions for an office developer
7  #
8  layout-menubar      mbar-office-dev
9  layout-toolbar       tbar-office-dev-one
10 layout-toolbar       tbar-office-dev-two

11 layout-manager.def:
12 # GUI layout definitions for a manager
13 #
14 layout-menubar      mbar-office-manager
15 layout-toolbar       staff-list-buttons
16 layout-toolbar       task-assignment-buttons
17 layout-toolbar       project-ops-buttons

```

FIG. 33

```

1  /* a menu choice using a focus variable named "@{filename}*/"
2
3  choice           c-rep-checkout-lock
4  choice-type     dialog
5  choice-cmd-iname cb-fvar
6  choice-cmd-dname prompt-for-filename
7  choice-cmd-xtext "checkout @{filename}"
8  end-choice

```

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FIG. 34

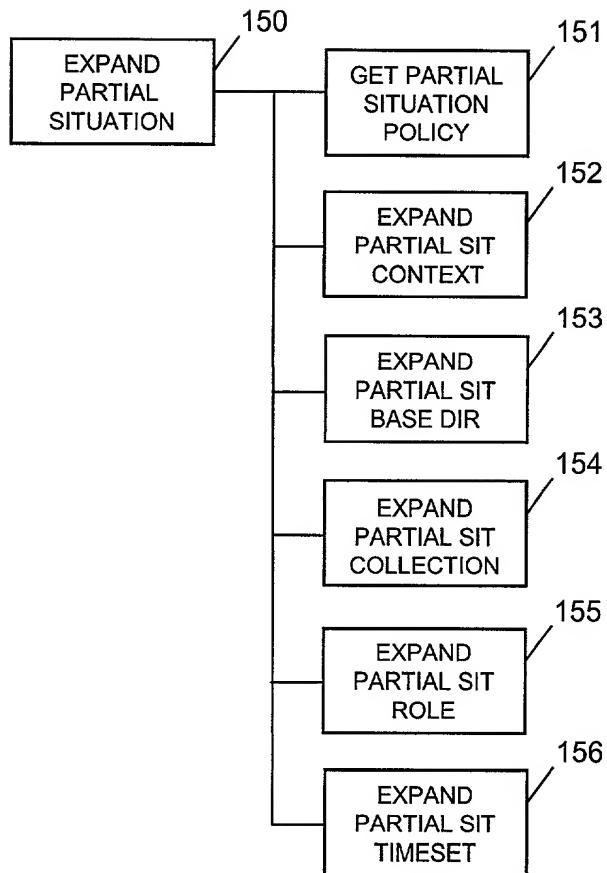


FIG. 35

- 1 /* simplified algorithm for Expand Partial Situation */
- 2 Get current partial situation policy
- 3 Expand incoming partial situation according to type:
- 4 For context, call expand partial situation context
- 5 For base dir, call expand partial situation base directory
- 6 For collection, call expand partial situation collection
- 7 For role, call expand partial situation role
- 8 For timeset, call expand partial situation timeset
- 9 Return expanded full situation to caller

FIG. 36

```

1  name-sitpol.tbl:
2  # a table of named situation policies (sitpol) for partial situations
3  sitpol-one      sitpol-one.def
4  sitpol-two      sitpol-two.def

5  sitpol-one.def:
6  # a definition file for a partial situation policy
7  sit-desc        <a descriptive text string>
8  sit-type        <a situation type name from name-type-sit.tbl>
9  #
10 partial-situation context
11 sit-ctx          <a context name from name-context.tbl>
12 sit-basedir      <a base directory in the filesystem>
13 sit-coll         <a collection name from the base directory>
14 sit-role         <a role name from name-role.tbl>
15 sit-timeset      <a timeset name from name-timeset.tbl>
16 sit-fvar         <a pair: fvar-name fvar-value>
17 sit-fgroup       <a focus group name from name-fgroup.tbl>
18 spec-value       <ctx name> <full situation name>
19 end-partial-situation
20 #
21 partial-situation basedir
22 ...
23 partial-situation collection
24 ...
25 partial-situation role
26 ...
27 partial-situation timeset
28 ...

```



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FIG. 37

```
1  sitpol-specific.def:
2  # partial situations that contain specific match values
3  #
4  sitpol          sitpol-one
5  sit-desc        <a descriptive text string>
6  sit-type        <a situation type name from name-type-sit.tbl>
7  #
8  partial-situation context ...
9  end-partial-situation
10
11 partial-situation basedir
12 ...
13 #               specific-role-name  full-situation-name
14 spec-value      c:\manager-info   sit-manager
15 spec-value      c:\html-files     doc-new-html
16 end-partial-situation
17
18 partial-situation collection ...
19 end-partial-situation
20
21 partial-situation role
22 ...
23 spec-value      role-developer   sit-my-program
24 spec-value      role-manager    sit-manager
25 end-partial-situation
26
27 partial-situation timeset ...
28 end-partial-situation
29
30 end-sitpol
```



FIG. 38

```

1  /* simplified algorithm for Expand Partial Sit Role */
2  /* Goal is to return a new role value, or a full situation */

3  /* handle incoming values that match specific role names */
4  look up incoming role value in spec-value entries
5  if a match is found among the spec-value entries
6      extract full situation name from spec-value entry
7      set specific-match flag for caller
8      return the full situation name and flag to caller

9  /* handle incoming values of 'none' */
10 else if incoming role change value is 'none',
11     clear sit-role value and return

12 /* handle incoming values that are new */
13 else if incoming role change value is not 'default'
14     look up value in name-role.tbl to ensure validity
15     if incoming role name is invalid,
16         set sit-role to default role value and return
17     set sit-role to new value and return

18 /* set the default role value */
19 else
20     set sit-role to default role value and return

```



FIG. 39

- 1 /* simplified algorithms for deriving partial situation values */
- 2 A. Timeset can be set from wall clock, or from default timeset.
- 3 B. Context values can be derived from a timeset def file.
- 4 C. Base directories can be derived from a timeset def file.
- 5 D. Collections can be derived from:
 - 6 - a timeset def file
 - 7 - a collection in current base directory, using first, last,
 - 8 most recently used, or other selection criteria
 - 9 - none
- 10 E. Role can be derived from a timeset def file, coll type def,
- 11 or from default role
- 12 F. Fgroups can be derived from a timeset def file, coll type def,
- 13 role def, or from a default list of fgroups
- 14 G. Fvars can be derived from a timeset def file, coll type def,
- 15 role def, or from a default list of focus variables



FIG. 40

```

1  /* change event data structure */
2  event-info {
3      + full-or-partial-situation-indicator
4      + full-work-situation-name
5      + partial-situation-change-event-type
6      + new-full-situation-values
7          + context
8          + base-directory
9          + collection
10         + role
11         + timeset
12         + list of focus variables and values
13         + list of focus variable groups and values
14     + other optional event information
15 }
```

FIG. 41

1	collection	c-myhomepage
2	coll-type	cf-web-page
3	coll-desc	A sample homepage collection
4	sit-ctx	debug
5	sit-role	role-manager
6	sit-fvar	<fvar name> <fvar value>
7	end-collection	

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FIG. 42

```
1  sit-my-program.def:  
2  # sit definition for a programmer working on a favorite  
3  # program and its 4 libraries in a favorite working directory  
4  #  
5  sit-desc    Work on my-program and its four libraries.  
6  sit-type    st-default  
7  sit-ctx     mine  
8  ... other situation specifier statements  
9  sit-fgroup  fg-dev-java  
  
10 sit-focus-gain <a menu choice, external command, or other action>  
11 sit-focus-gain <another action to take on gain of focus>  
12 sit-focus-gain c-rep-checkout-lock (see FIG 33)  
13 ...  
  
14 sit-focus-loss <a menu choice or action on loss of situation focus>  
15 sit-focus-loss <another menu choice to take on loss of sit focus>
```

